

KEYCAP FOR DISPLAYING A PLURALITY OF INDICIA

TECHNICAL FIELD

[0001] The present invention relates to touch sensitive keyboards and more particularly, to a configurable touch sensitive keyboard button overlay that allows existing touch sensitive keyboards to work with various software programs.

BACKGROUND INFORMATION

[0002] Computers can be useful tools for communicating with and/or teaching individuals with disabilities, if the individuals have a way of interacting with the computer. Special computer keyboards using specially designed keycaps have been designed for individuals with motor difficulties from such disabilities as cerebral palsy, cognitive impairments, and brain trauma and blind individuals.

[0003] One such type of keyboard used is a touch sensitive keyboard having removable keycaps. These touch sensitive keyboards use overlays with various letters, numbers, or symbols to allow disabled individuals to learn and/or play games with the computer. For example, the computer may ask the student questions requiring the student to properly answer the question by activating a touch sensitive region on the keyboard.

[0004] However, even these specially designed touch sensitive keyboards have limitations because they are not able to interact with many of the features of existing software programs. Many software programs that are designed to teach students to read often ask students to locate sentences or multiple words or characters. For example, a software program may instruct a student to find the sentence, "The dog jumped over the fence."

[0005] Unfortunately, the keycaps currently used with the known touch sensitive keyboards are limited because they can only display a single character or symbol on a specific position or switch on a keyboard at a time. Accordingly, each character or symbol of a word must utilize a separate position or switch on the keyboard. As a result, students cannot simply press/slide a single keycap on the keyboard and have the computer tell the user what the sentence says or verify that the student has chosen/located the proper words or phrase. In addition, each keycap has fixed information that cannot be changed or modified to suit the needs of the student, trainer or software program.

[0006] Accordingly, what is needed is a device that allows existing touch sensitive keyboards to interact with existing software programs. The device should allow the keyboard to be configured in a way which would allow a student to press/slide a single button and allow the software program to recognize the entire phrase or sentence. There is also a need for a device that allows an instructor to easily and inexpensively alter the button to display a wide variety of symbols, characters, phrases, or sentences.

SUMMARY

[0007] The present invention features a keycap for use with a keyboard having a plurality of activation keys. The keycap comprises at least one engagement member, for removably engaging the keycap with at least one of the

activation keys and at least a first support structure. The first support structure includes first and second surfaces disposed above a top surface of the engagement member and is larger than at least one of the activation keys. The first support structure is also adapted to display a plurality of indicia.

[0008] According to a preferred embodiment, the keycap further includes at least one attachment member, for removably attaching an overlay, containing the indicia, to the first surface of the first support structure. The attachment member may be selected from the group consisting of clips, hook and loop fasteners, releasable adhesives, and snaps, but preferably comprises at least a second support surface and a pair of channels disposed on opposite ends of the second surface of the first support structure.

[0009] The second support structure is adapted to be interfaced with the top surface of the engagement member and slidably engage the pair of channels. In use, the overlay is sandwiched or otherwise held immobile between the first support structure and the second support structure with the indicia being disposed on the first surface of the first support structure.

[0010] In another embodiment, the first surface of the first support structure is preferably substantially flat and at least the first support structure or the second support structure further includes orientation indicia. The second support structure preferably has a generally trapezoidal shape and the pair of channels preferably have a corresponding generally inverted trapezoidal shape adapted to slidably engage with and provided a stop for the generally trapezoidal second support structure. Other structures may also be used other than a trapezoidal shape which serve as a "stop" to prevent the first support structure from sliding off or disengaging from the second support structure at least in one direction when pushed against by a user.

[0011] Optionally, the keycap may include at least two engagement members that removably engage at least two activation keys.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] These and other features and advantages of the present invention will be better understood by reading the following detailed description, taken together with the drawings wherein:

[0013] FIG. 1 is schematic diagram of the keycap used with a touch sensitive keyboard and a computer, according to one embodiment of the present invention;

[0014] FIG. 2 is cross-sectional perspective view of a keycap not connected to engagement members, according to one embodiment of the present invention;

[0015] FIG. 3 is another cross-sectional perspective view of a keycap connected to two engagement members, according to one embodiment of the present invention;

[0016] FIG. 4 is a cross-sectional perspective view of the first support structure and an overlay, according to one embodiment of the present invention;

[0017] FIG. 5 is to plan view of an overlay, according to another embodiment of the present invention;

[0018] FIG. 6 is a cross-sectional perspective view of the second support structure, according to one embodiment of the present invention;